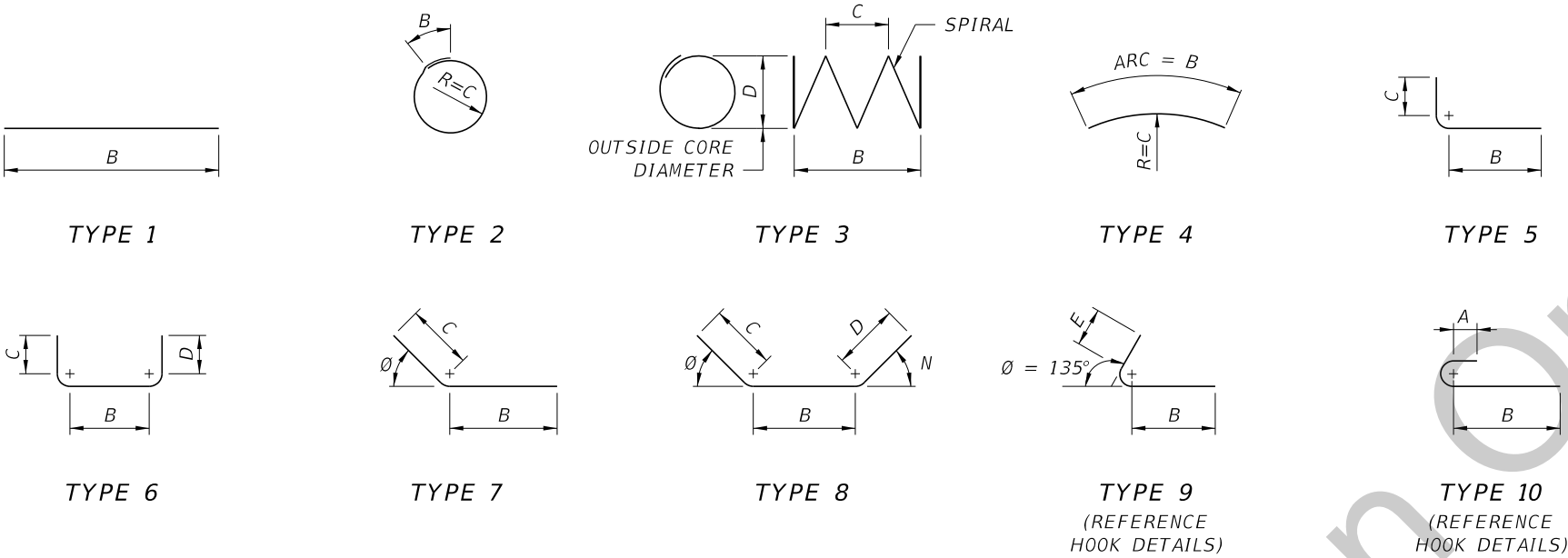
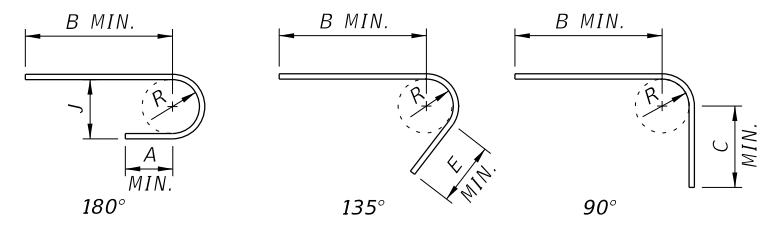


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SINGLE BAR BENDING DETAILS

FRP REBAR HOOK DETAILS



BAR SIZE	R	180° HOOKS		135° HOOKS	90° HOOKS
		A/B MIN.	J	E/B MIN.	C/B MIN.
#2	1½"	3"	3"	3"	3"
#3	2¼"	4½"	4½"	4½"	4½"
#4	2¼"	6"	4½"	6"	6"
#5	2¼"	7½"	4½"	7½"	7½"
#6	2¼"	9"	4½"	9"	9"
#7	3"	10½"	6"	10½"	10½"
#8	3"	1'-0"	6"	1'-0"	1'-0"

NOTES

GENERAL

For Bar Dimensions See REINFORCING BAR LIST Sheet(s) in Structures Plans.

SPIRALS (TYPE 3 BARS)

C = Pitch  
B = Overall Height  
Ø = Spirals shall be made of GFRP with a minimum Modulus grade of 6.5x10³ ksi or CFRP with a minimum Modulus grade of 18x10³ ksi.  
N = Total number of closed turns at Top and Bottom of columns

Splices may be accomplished by lapping 1.5 turns. Cost of Channel Spacers and Splices shall be included in the Contract Unit Price for Fiber Reinforced Polymer Reinforcing.

HOOKS

All dimensions are approximate.

Hook Styles Detailed on this sheet are for Illustration Only.

Actual Hook Style for any particular bar will be shown under A or E Heading on REINFORCING BAR LIST sheet(s) in Structures Plans.

REINFORCING LAPS

ℓ<sub>d</sub> shall be calculated and detailed per ACI 440.1R.

Lap Splice distances shall be ≥ 1.3ℓ<sub>d</sub>

Where bars of unequal sizes are lapped, the greater ℓ<sub>d</sub> value of the lapped bars shall be used.